

Various features shown in one embodiment may be used with other embodiments including features described in Ser. No. 560,699 which are not otherwise described herein. 30

What is claimed is:

1. In a hand held article of equipment having an elongated handle which includes a shaft with a gripping area having a gripping surface to be gripped by the user in a squeezing action, the improvement being in an inner core around said shaft, a flexible vibration absorbing material around said inner core, said vibration absorbing material having an outer surface which comprises said gripping surface, said outer surface of said vibration absorbing material being the outermost surface of said handle at said gripping area, said vibration absorbing material having a hardness of less than about 40 durometer Class D durometer reading, said vibration absorbing material having a high coefficient of friction, said vibration absorbing material having a high dampening of vibration, said inner core having a plurality of integral spaced rigid projections forming a continuous series of peaks and valleys, the thickness of said vibration absorbing material at said valleys being greater than twice the thickness of said vibration absorbing material at said peaks, the outer ends of said peaks being closer to said outer surface than any other portions of said inner core is to said outer surface, said projections extending into said vibration absorbing material a substantial distance and in a pattern over a sufficient portion of the length of said gripping area to comprise means to provide rigidity during the use of said article, said projections being located inwardly of said outer surface of said vibration absorbing material, said vibration absorbing material and said inner core being secured together by said projections extending into said vibration absorbing material, said vibration absorbing material being distinct from said inner core and said projections, and said vibration absorbing material completely covering said projections to render said outer surface of said vibration absorbing material as the sole user contacting and gripping surface in said gripping area during use of said article. 65
2. The device of claim 1 wherein each of said projections extends longitudinally down the length of said gripping area.

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3. The device of claim 1 wherein said coefficient of friction is at least 0.6, and said dampening of vibration is greater than 55%.

4. The device of claim 3 wherein said outer surface of said vibration absorbing material is tacky and non-porous and has a coefficient of friction of 0.6-1.0.

5. The device of claim 1 wherein said shaft and said inner core are of one piece construction.

6. The device of claim 1 wherein said article is a golf club.

7. The device of claim 1 wherein said handle is part of an article selected from the group consisting of golf clubs, javelins, racquets, sticks and bats.

8. The device of claim 1 wherein said inner core is in the form of an insert permanently and non-removably secured to said shaft.

9. In a hand held article of equipment having an elongated handle which includes a shaft with a gripping area having a gripping surface to be gripped by the user in a squeezing action, the improvement being in that said handle includes a sleeve around said shaft in said gripping area, an inner core around said sleeve, a flexible vibration absorbing material around said inner core, said vibration absorbing material having an outer surface which comprises said gripping surface, said vibration absorbing material having a hardness of less than about 40 durometer reading, said vibration absorbing material having a high coefficient of friction, said vibration absorbing material having a high dampening of vibration said inner core having a plurality of spaced rigid projections extending in a pattern over a sufficient portion of the length of said gripping area to provide rigidity during the use of said article, said projections being located inwardly of said outer surface of said vibration absorbing material, said vibration absorbing material and said inner core being secured together by said projections extending into said vibration absorbing material, said vibration absorbing material being distinct from said inner core and said projections, and said vibration absorbing material completely covering said projections to render said outer surface of said vibration absorbing material as the sole user contacting and gripping surface in said gripping area during use of said article.

10. The device of claim 9 wherein said inner core includes a plurality of spaced peaks and valleys, said peaks being said projections, and said material being of non-uniform thickness.

11. The device of claim 9 wherein said sleeve is of uniform thickness.

12. The device of claim 11 wherein said sleeve is heat shrunk onto said shaft.

13. The device of claim 9 including an adhesive between said sleeve and said inner core.

14. The device of claim 9 including an adhesive between said sleeve and said shaft.

15. The device of claim 9 wherein said inner core includes a recess at its outer end, and a cap mounted in said recess.

16. The device of claim 10 wherein each of said projections extends longitudinally down the length of said gripping area.

17. The device of claim 9 wherein said inner structure has a hardness durometer reading of 0.25-0.95.

18. The device of claim 9 wherein said coefficient of friction is at least 0.6, and said dampening of vibration is greater than 55%.

19. The device of claim 18 wherein said outer surface of said vibration absorbing material is tacky and non-porous and has a coefficient of friction of 0.6-1.0.

20. The device of claim 9 wherein said article is a golf club.

21. The device of claim 9 wherein said handle is part of an article selected from the group consisting of golf clubs, javelins, racquets, sticks and bats.

22. A method of forming a gripping surface on an elongated handle which includes a shaft comprising the steps of forming an inner core which includes a plurality of spaced rigid projections extending in a pattern over a length generally corresponding to the length of a gripping area, providing a flexible vibration absorbing material around the inner core to form a composite outer structure wherein the projections are located inwardly of the outer surface of the vibration absorbing material with the vibration absorbing material and inner core being secured together by the projections extending into the vibration absorbing material, sliding the composite outer structure down the handle completely past a location on the handle which is to be the gripping area, sliding a sleeve around the handle on the gripping area, heat shrinking the sleeve to secure the sleeve to the handle, sliding the composite outer structure up the handle until the composite outer structure is over the sleeve,

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and securing the composite outer structure to the sleeve forms whereby the outer surface of the vibration absorbing material the gripping surface of the handle.

23. The method of claim 22 wherein the composite outer
5 structure has a recess at its remote end, and snapping a cap into the recess.

24. The method of claim 23 including providing an adhesive between the sleeve and the handle.

25. The method of claim 22 including providing an
10 adhesive between the sleeve and the outer structure.

26. The method of claim 22 wherein the vibration absorb-
ing material has a coefficient of friction of at least 0.6 and a
dampening of vibration greater than 25% and a hardness of
15 less than 60 durometer reading.

27. The method of claim 26 wherein the vibration absorb-
ing material has a dampening of vibration greater than 55%
and a hardness of less than 40 durometer reading.

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28. In a hand held article of equipment having an elongated handle which includes a shaft with a gripping area having a gripping surface to be gripped by the user in a squeezing action, the improvement being in a flexible vibration absorbing material around said gripping area, said vibration absorbing material having an outer surface which comprises said gripping surface, said outer surface of said vibration absorbing material being the outermost surface of said handle at said gripping area, said vibration absorbing material having a hardness of less than about 40 durometer Class D durometer reading, said outer surface of said vibration absorbing material having a high coefficient of friction, said vibration absorbing material having a high dampening of vibration, said vibration absorbing material being in the form of an elongated flexible tape wrapped around said gripping area, and said vibration absorbing material completely covering said gripping area to render said outer surface of said vibration absorbing material as the sole user contacting and gripping surface in said gripping area during use of said article.
29. The device of claim 28 wherein said vibration absorbing material is applied to a mesh material to form said

tape.

30. The device of claim 28 wherein said handle is part of an article selected from the group consisting of golf clubs, javelins, racquets, sticks, bats, shovels, rakes, brooms, hammers, wrenches, pliers, screw drivers, knives and handlebars.
31. The device of claim 28 wherein said vibration absorbing material is a tacky silicone material.
32. A device for covering the gripping area of a handle of a hand held article of equipment to facilitate a holding of the handle in a squeezing action and to minimize vibration during use of the article, said device comprising a flexible vibration absorbing material having an inner surface and an outer surface, said vibration absorbing material having a hardness of less than about 40 durometer Class D durometer reading, said outer surface of said vibration absorbing material having a high coefficient of friction, said vibration absorbing material being tacky, and said vibration absorbing material being in the form of an elongated flexible tape capable of being wrapped around the handle.
33. The device of claim 32 wherein said vibration absorbing material is applied to a mesh material to form said

tape.

34. The device of claim 32 wherein said vibration absorbing material is a silicone material.
35. In a hand held article of equipment having an elongated handle which includes a shaft with a gripping area having a gripping surface to be gripped by the user in a squeezing action, the improvement being in that said handle is hollow and has an outer surface and an inner surface, flexible vibration absorbing material being in said hollow handle disposed against said inner surface of said hollow handle, said vibration absorbing material having a hardness of less than about 40 durometer Class D durometer reading, and said vibration absorbing material having a high dampening of vibration.
36. The device of claim 35 wherein said dampening of vibration is at least 25%, and said vibration absorbing material being a silicone material.
37. The device of claim 35 wherein said dampening of vibration is at least 55%.
38. The device of claim 35 wherein said vibration absorbing material is a filler for said hollow handle.
39. The device of claim 35 wherein gripping material is secured around said outer surface of said handle, and

said gripping material having a high coefficient of friction.

40. In an athletic pad to be worn by a user the improvement being in a vibration absorbing material applied to said pad, said vibration absorbing material having a hardness of less than about 40 durometer Class D durometer reading, and said vibration absorbing material having a high dampening of vibration which is at least 25%.
41. The pad of claim 40 wherein said dampening of vibration is at least 55%, and said vibration absorbing material being a silicone material.
42. The pad of claim 40 wherein said pad is a shoulder pad.
43. In a hand held article of equipment having an elongated handle which includes a shaft with a gripping area having a gripping surface to be gripped by the user in a squeezing action, the improvement being in an inner core around said shaft, a flexible vibration absorbing material around said inner core, said vibration absorbing material having an outer surface which comprises said gripping surface, said outer surface of said vibration absorbing material being the outermost surface of said handle at said gripping area, said outer surface of said vibration absorbing material

having a hardness of less than about 40 durometer Class D durometer reading, said vibration absorbing material having a high coefficient of friction, said vibration absorbing material having a high dampening of vibration, said inner core having two spaced ends, said inner core tapering in diameter from one of said ends to the other of said ends, and said vibration absorbing material completely covering said inner core to render said outer surface of said vibration absorbing material as the sole user contacting and gripping surface in said gripping area during use of said article.

44. The device of claim 43 wherein said coefficient of friction is at least 0.6, said dampening of vibration being greater than 55%, and said vibration absorbing material being a silicone material.
45. The device of claim 43 wherein said outer surface of said vibration absorbing material is tacky and non-porous and has a coefficient of friction of 0.6-1.0.
46. The device of claim 43 wherein said vibration absorbing material tapers in diameter from one end to another, and said handle is a part of an article selected from the group consisting of golf clubs, javelins, racquets, stick, bats , shovels, rakes, brooms, hammers, wrenches, pliers, screw drivers, knives and handlebars.